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XXIII. *Extract of a Letter from Mr. Alexander Small, Surgeon to the Train of Artillery at Minorca, to Sir John Pringle, Bart. P. R. S. Dated St. Philip's, Aug. 8, 1775.*

R. Apr. 15, 1776. **I** BEG leave to give you this trouble, and to add some conjectures, which may be a kind of addition to Dr. CLEGHORN's Account of this Island. I live near the Glacis, and the artillery men are constantly lodged in the square within the castle. A little beyond the square is our hospital. My attendance at these two places gives me no more than a salutary exercise. The artificers in the civil branch of the ordnance, who are under my care, live near me in the remains of the town of St. Philip. I call them remains, because many of the houses were destroyed during the late siege, and many since; it being determined, that the town shall be removed to a greater distance from the castle. A new spot is accordingly marked out near English Cove, on the side of the harbour; and barracks for two regiments, together with some houses, are already built. The new as well the old town are built in a very dry situation, on a solid rock, on which there is not a drop of stagnating water, nor is there any near the surface of the earth; for the water the inhabitants have for use, is either rain-water

kept

kept in cisterns, or water drawn out of wells, from twenty to sixty or more feet in depth; nor are there any marshes near either town, or indeed in this part of the island.

The castle of St. Philip stands, or rather is cut out of the solid rock, on a promontory, two-thirds of which are washed by the sea, and is open to the sea winds from two-thirds of the compass. As there is no tide there is no slimy shore, which might send forth putrid vapours at low-water; and if there were a tide, our shore is one continued rock, on which there is not any putrescent substance. Indeed the rocks are so free from filth, that after a strong wind has raised the sea-water, and carried it into cavities hollowed in the rock by storms, it dries there into pure white salt.

During the hot weather in July, August, and September, our unhealthy season, the air is daily ventilated, either by general winds, which pass freely over the island, or by sea-breezes. The air over the land being rarefied by the reflected rays of the Sun, and by being in contact with the heated earth, necessarily makes room for the cooler and denser air in contact with the cooler sea-water. Whence, in such a situation, shall we seek for the causes of *tertianas*, so called here, and so much dreaded during the hot months? Two causes seem to offer themselves; one very obvious, the other rather more remote. The Southerly winds are much complained of here, as occasioning a general lassitude, and as bringing with them noxious *effluvia* from Africa; but whoever considers the
distance

distance between this island and Africa, will scarcely believe, that the air can carry with it, so far, any other quality than the warmth attending the season of the year. Gibraltar, nearer Africa, and more Southerly than we are, is not subject to *tertians*, nor are some places even in this island. The causes therefore must be sought for on the spot. In a situation, such as I have described ours to be, you may believe, that shade and a plentiful supply of fresh succulent culinary plants must be very desirable. On so dry a rock, an artificial supply of moisture must become necessary, especially in a country where there seldom is rain from May to October. It is not an easy matter to keep a due mean in the use of whatever experience shews to be necessary. If a little does good, we are apt to conclude, that a great deal will do more good: thus, I think, it fares with us in regard to the use of water in our gardens. In order to have a garden, it is necessary here to have a draw-well. The drawing of water is the labour of an ass; and, as the labour is not hard, the beast is kept at it pretty constantly, and thus plenty of water is drawn up. As the water is hard, and is much colder than the temperature of the air, it is kept in cisterns for some time, exposed to the Sun, till it acquires the temperature of the air, and thus becomes more friendly to vegetation than if used immediately on being drawn up. Having thus obtained plenty of water, they bestow it most copiously on their gardens. Suppose yourself landed at St. Philip's in this season of the year, on a dry, parched rock, and that you were told, that the rock was uniformly the same all the way

way to Mahon, a distance of two miles, and that you were under a necessity of going to Mahon in the evening; would you expect to be serenaded on this rock with the croaking of frogs all the way you went? This literally is the case. The gardens on each side the road are so much watered, that the frogs, bred in the cisterns which contain the water, spread and enjoy themselves around, and frequently take up their abode in trees. This shews that even the trees abound much in watery juices, seeing the exhalations arising from them yield an atmosphere agreeable to the frogs. Where land is thus abundantly watered and closely planted with succulent vegetables, many parts of these vegetables, as well as the insects which feed on them, will be liable to putrify; and a putrid vapour may be thence exhaled in the evening especially, and during the night, when there seldom is wind to carry them off. Wherever the inhabitants can find a proper depth of mould, within a convenient distance of a market, so many sources of putrid exhalations are formed.

Let me give an instance, to shew that this opinion is not merely ideal. On the North-side of St. Philip's there is a road, bounded on the North by a wall, called the Line-wall: Dr. HUCK must remember it and the environs. Along and near that wall there are many gardens, which thus send forth unhealthy vapours; and the effect is, that the houses on the South-side of that road, though facing the North, and thereby, one would think, the healthier, are called Rotten-row, their unhealthiness being

being owing, as is believed, to the vapours arising from these gardens; for houses situated on the South-side of the town, though at a little distance, are by much the more healthy, though more exposed to the heat of the meridian Sun. Other instances might be quoted; and experience has taught us, that it is found to be very prejudicial to health to remain exposed to the evening dews near Mahon or St. Philips, round which these gardens chiefly abound, while country peasants lie in their vineyards whole nights without being hurt, the vines being left to nature for a supply of moisture.

Perhaps it may seem, that, while the heat and drought of the climate makes this method of gardening necessary, and at the same time require a large supply of succulent vegetables and fruits, these ill consequences must be unavoidable. But M. DE CHATEAU-VIEUX, a magistrate of Geneva, has pointed out a very promising remedy, suggested to him by some of his own judicious experiments in agriculture.

The second general cause of *tertians* was pointed out to me by Dr. MUNRO, physician of this island, an ingenious gentleman, and very observant of every thing relating to his profession.

The rocks of this island consist chiefly of two kinds of stone; one so hard that scarce any tool can touch it; and the other so soft, that it is easily cut into any form. It much resembles the Bath stone, and is called Canton stone. The first is impervious to any fluid; but the other sucks up, or is penetrated by, moisture, like filtering

stones. I found, some years ago, this to be the case with the Bath stone. Mr. ALLEN covered his workmen's houses with flat stones brought from the quarry, and cut of a proper thickness: I mentioned to one of the inhabitants, that their houses being so closely covered were, I supposed, very warm; and was surprized at being told, that they were much the reverse; for that in rainy weather, the water penetrated through the stones; and that in frosty weather, the inside of the roofs were covered with ice, whereby their upper rooms were of little use to them. These different qualities of the stones in this island are not, perhaps, sufficiently attended to.

When houses are built on the hard rock, all within the walls is levelled; and on that floor the poorer inhabitants live. As this stone takes a greater degree of cold than substances less solid, and does not so soon come to the temperature of the air; it consequently cools, and attracts to it the moisture in the air, and retains it long on its surface. In order to avoid the damp cold feel, if the inhabitants can afford to buy a mat, they cover the floor with it; under which the wet remaining, induces a degree of putrefaction, which renders the houses more unhealthy, and reduces the inhabitants to a state ready to be affected by any distemper, especially by the *tertian*, which spreads by contagion. As the moisture remaining on this stone is but temporary, provided there are drains to carry the water off, its bad effects are easily prevented by keeping a fire burning, or by laying the ground-floor with terrace, or with deal-boards.

When houses are built on the soft Canton stone, the rain that falls without soaks through it; and if there are no means of carrying it off, it remains in the stone, becomes putrid, gradually exhales, and thus becomes highly prejudicial to health. I might quote several instances of families dying in consequence of such putrid moisture; but shall rest satisfied with one, because it became an object of general observation.

At a little distance from, and to the Northward of the Line-wall, a lofty building was erected for a house of entertainment. The people who inhabited it became very unhealthy; and in a few years so much so, that two or three whole families died in it. This house, I am told, is built on Canton stone, the hollows filled with Canton rubbish, and is surrounded by gardens continually watered, some of which are higher than the floor of this building; by which means the stone became the receptacle of the waste water. In order to remedy this inconveniency, the floor was taken up, and a stench arose which the workmen could scarcely bear, and changed the colour of every metallic substance about them. People were impressed with so strong a prejudice against the house, that it remains uninhabited and an useless building. The same has happened in other dwelling-houses; in which the same stench, and other indications of putrefaction, were met with, as in the former case.

I can yet, thank God, say very little of the disease of this country, for we still continue very healthy. I have met with two instances of how fast a hold *tertians* take

of the constitution, when the patients have been subject to frequent relapses. Dr. MUNRO tells me, that an addition of *Myrrh* ℥ij. to *Cort. Peru.* ℥j. is the best medicine he knows in this case. I have tried it in both, with seeming success; for we can say nothing certain on that head till the winter. One of them was much afflicted with pains in the lower part of the belly, even after the fever had left him. I gave him *Calomel.* gr. vi. *Pulv. Rhei* gr. xv. in a bolus, and repeated it, at proper intervals, four times. He thinks his present health is much owing to it; as does my other patient from the same medicine. I have found *calomel* peculiarly beneficial to several children who had periodical heats on them, especially at night.